Drepaniella mapae gen. et spec. nov., a New Goniodoridid Nudibranch from South-Eastern Australia

by

ROBERT BURN

34 Autumn Street, Geelong West, Victoria, Australia

(Two Textfigures)

The nudibranch family Goniodorididae is poorly represented in Australian waters; until this record the family was represented by two species of Goniodoris, both of which are restricted to the south-eastern coastline of Australia. The family is well represented in New Caledonia (Risbec, 1928) and Japan (Baba, 1949) in the Pacific area. The opportunity is here taken to provide a synoptic key to the genera which have at various times been assigned to the Goniodorididae.

DREPANIELLA BURN, gen. nov.

Goniodoridids, without mantle margin or processes, dorsum without cirri or processes. A single bifurcated process present laterally to each rhinophore. A pair of stout extrabranchial processes present. Gills three, bipinnate. Rhinophores large, with strong annular lamellae around them, contractile. Tentacles digitiform, ends slightly swollen and rounded. Foot without tentaculiform anterior corners, anterior margin rounded and bilabiate. Radula and jaws unknown. Genital organs unknown.

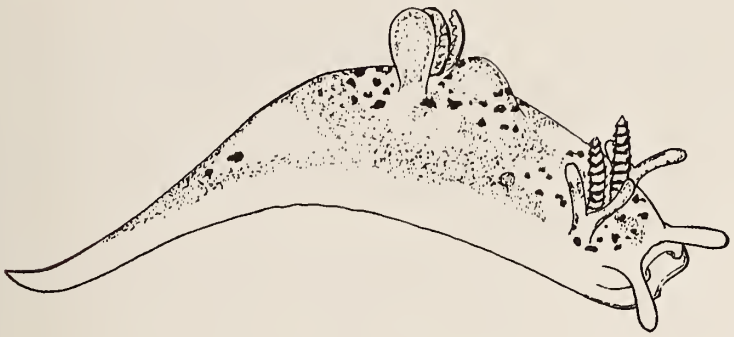
Type species: Drepaniella mapae spec. nov.

Drepaniella mapae BURN, spec. nov.

The single living slug was 4 mm. long, of this the tail comprised about one-third. Preserved, it measured 1.5 mm. long, 0.7 mm. broad, and 0.9 mm. high. The body is translucent and smooth. The colour is whitish, the tail and margins of the foot are opaque white. A subepidermal cream pigment marks the sides of the body; a broad band of the same colour transverses the body in front of and behind the gills, and there is a narrow median stripe of the colour between the rhinophores. Varying sized dark spots of brown epidermal pigment complete the body colouring; these are mostly spread in front of the gills and rhinophores, behind the gills, and there are one or two spots each side on the tail. In preservative (alcohol), the brown pigment becomes black. In the living slug, the gills were yellowish, the anal area between the gills yellow, and the rhinophores were whitish with opaque lamellae.

The body is slender and humped, being highest at the pericardial prominence just in front of the gills. The foot is narrower than the body. The tentacles are digitiform, the ends slightly swollen and rounded. The rhinophores are large, triangular in section with a flat face to the front; there are seven strong lamellae on each, these are more prominent behind than in front. The rhinophoral processes at the anteriolateral base of each rhinophore is stout at its base but bifurcated into two slender distally-swollen arms at about midlength; the processes are about half as long as the rhinophores. The three gills are bipinnate, the central one is the largest and has 6 or 7 rounded pinnules each side of the rhachis. The extrabranchial process, one each side just posterior to the level of the lateral gills, are stoutly digitiform with rounded ends and narrow bases. The anterior edge of the foot is bilabiate and curves up like a crescent towards the mouth. A very thick-edged shallow veil or ledge is present below and between the tentacles; on each side this terminates in a minute lobiform knob.

The genital pore is about one-third the rhinophore-gill distance behind the rhinophores. The male duct is visible in the living slug as a shining cream hair-line disappearing into the body; it gives the impression of being cuticularized or armed for this part.



Drepaniella mapae BURN, gen. et spec. nov.

Figure 1: Animal seen from Right Side
Figure 2: Animal seen from Dorsal Side magnification 24 x

The eyes are visible deep within the body just behind the rhinophores, where they appear to be sessile upon the central nervous system. They are black in colour.

The radula, jaws and genital organs have not been examined in the only available slug.

Occurrence: The single specimen was collected just south of Point Danger, Torquay, Victoria, Australia (long. 144° 19'15"East, lat. 38° 20'45"South). It was seen crawling on the green alga Caulerpa in a large rock pool at low tide; collected by the writer, October 23, 1960.

Holotype: The one and only specimen has been deposited in the National Museum of Victoria, Melbourne, Australia, no. F21'273.

Discussion: This minute species at present cannot be confused with any known Australian species of Nudibranchia. Drepaniella mapae can be differentiated from all the known species of the family Goniodoridídae by either the rounded instead of tentaculiform foot corners or the bifurcated rhinophoral processes instead of styliform ones. In particular, these two characteristics of the new genus separate it from Trapania Pruvot-Fol (1931, p. 309), the genus to which the writer thinks the new genus approaches closest. As indicated in the key of Goniodoridid genera, Trapania has both tentaculiform foot corners and rhinophoral processes but the latter are simple. Ancula Lovèn (1846) has a pair of rhinophoral processes to each rhinophore but they arise separately from the body and not from a common trunk as in Drepaniella. Certain Goniodoridids such as Hopkinsia MacFarland (1905) and Okenia Menke (1830) have dorsal cirri, others have a mantle brim (Goniodoris Forbes and Goodsir, 1839) while a third group have this mantle brim replaced by a number of processes (Ancula Lovèn, 1846). In each and every case tentacles are present on the head. Nine genera are here considered to belong to the Goniodoridídae, and these are tabulated below in a key to the family.

1. Sole of foot broad, anterior corners tentaculiform. Mantle brim present. Radular formula 1.1.0.1.1 . . . . . Goniodoris Forbes and Goodsir 1839
1. Sole of foot narrow 2
2. Dorsum without cirri or processes . . 3
2. Dorsum with cirri and papillae . . . 6
3. Foot corners tentaculiform 4

3. Foot corners rounded. With one bifurcated process at the base of each rhinophore and one process each side of the gills. Radular formula unknown . . . . . Drepaniella Burn gen. nov.
4. Without rhinophoral and extrabranchial processes. Radular formula 2.1.0.1.2 . . . . . Spahria Risbec 1928
4. With rhinophoral and extrabranchial processes 5
5. With two processes at the base of each rhinophore and a number of processes beside the gills. Radular formula 1.1.1.1.1. . . . . .Ancula Lovèn 1846
5. With one process at the base of each rhinophore and one process each side of the gills. Radular formula 1.0.1. . . . . .Trapania Pruvot-Fol 1931
6. With one or two cirri at the base of each rhinophore and one or two large cirri in the median line in front of the gills. Radular formula 1.1.0.1.1. . . Okenia Menke 1830
6. Asaabove but without rhinophoral and pregill cirri. Radular formula 3.1.0.1.3. . . . . Bermudella Odhner 1941
6. Without rhinophoral processes. Radular formula 1.1.0.1.1. 7
7. Cirri spread sparsely over dorsum and along mantle brim. Cirri present in semicircle in front of gills . . . . . Hopkinsiella Baba (vide 1949)
7. Cirri densely spread over dorsum and along mantle brim . . . . . Hopkinsia MacFarland 1905

The new generic name is derived from the preoccupied Drepania Lafont (1874) which was replaced by Trapania Pruvot-Fol (1931). The specific name comes from the monogram of Miss Margaret A. Pilbeam, of Torquay, Victoria, who was present with the writer when the species was collected.

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